

Dr. Muhammad Ajmal

Date of Birth: March 01, 1988

Correspondence Address: Department of Chemistry, University of Education Lahore, Attock Campus, Attock, Pakistan

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Google Scholar Link

<https://scholar.google.com/citations?user=0HStcIwAAAAJ&hl=en>



Research Expertise and Interests

- Synthesis of hydrogels with different compositions and dimensions
- Fabrication of metal/metal oxide nanoparticles and quantum dots in hydrogels
- Characterization of hydrogels and their hydrogel-metal/metal oxide composites with Laser Light Scattering, Atomic Absorption Spectrophotometer, FT-IR Spectrophotometer, UV-Visible Spectrophotometer, Fluorescence Spectrophotometer, Thermogravimetric analyzer, SEM, TEM, and EDX.
- Adsorption and Catalytic applications of hydrogel and hydrogel-metal nanocomposites in the degradation of water pollutants
- Chemical sensing with hydrogel-metal nanocomposites
- Drug delivery applications of hydrogels
- Antibacterial studies of hydrogel-metal nanocomposites

Academic Qualification

PhD in Physical Chemistry from Quaid-i-Azam University Islamabad. Session 2012-2016

Thesis title: Synthesis and characterization of polymer beads and hydrogel metal nanoparticle composites for adsorption and catalytic applications

M.Phil. in Physical Chemistry from Quaid-i-Azam University Islamabad. Session 2010-2012

Thesis title: Synthesis and characterization of hybrid microgels for catalytic applications

M.Sc. in Physical Chemistry from Bahauddin Zakariya University Multan. Session 2008-2010

B.Sc. in Physics, Chemistry, Mathematics from Bahauddin Zakariya University Multan. Session 2005-2008

Research Supervision and Articles

- Published 52 (24 as principal author) research articles in peer reviewed international journals of impact factors. The cumulative impact factor is above 200.
- Presented Research work in 15+ International Conferences
- Supervised one PhD, 22 MS/M.Phil., and 30 BS research students

Research Projects/ Grants Utilized = 02

Project Title:	Fabrication of transition and noble metal nanoparticles in responsive hydrogel matrices and investigation of their catalytic properties
Amount:	4,35,600 (PKR)
Funding Agency:	Higher Education Commission of Pakistan
Project Number:	No. 21-1844/SRGP/R&D/HEC/2018

Project Title:	Synthesis of easily recyclable hydrogels for efficient adsorptive removal of heavy metal ions and dyes from water
Amount:	£5000 = 17,38,045 (PKR)
Funding Agency:	Royal Society of Chemistry, UK
Project Number:	R24-6670478308

Professional Experience

- **Assistant Professor at Department of Chemistry** University of Education Lahore, Attock Campus, Attock, Pakistan from April 12, 2019, to till
- **Assistant Professor at Department of Chemistry** University of Wah, Wah Cantt, Pakistan from October 03, 2017, to April 03, 2019
- **Assistant Professor at Institute of Chemical Sciences**, Bahauddin Zakariya University Multan, Pakistan from September 08, 2016 to September 07, 2017
- **Visiting Faculty Member at Department of Chemistry QAU**, Islamabad from March 2016 to July 2016
- **Teaching Assistant at Department of Chemistry QAU**, Islamabad from September 2015 to February 2016
- Four years teaching experience at intermediate level in Punjab Colleges, Islamabad.

Research Fellowship

Research Fellowship Program for Foreign Citizens by TUBITAK Turkey at Nano Science and Technology Research and Application Center Canakkale Onsekiz Mart University, Turkey. Topic: “Synthesis and characterization of hydrogel metal nanoparticle composites for catalytic applications”

Workshops/ Training

Training Workshop on advanced Chemical Techniques in Natural and Applied Sciences organized by Department of Chemistry and Central Hi-tech Lab University of Agriculture Faisalabad, Pakistan. 10th to 12th September 2015

Awards

- Travel grant from Royal Society of Chemistry, UK for International Conference on Innovation, Sustainability, and Applied Sciences (ICISAS 2023)” Organized by Curtin University Dubai, UAE.
- Travel grant from Higher Education Commission for “Fifth International Conference on Multifunctional, Hybrid and Nanomaterials” organized by Elsevier at the Lisbon Congress Center, Praça das Indústrias, 1300-307 Lisboa, Portugal.
- One-Year scholarship under *Research Fellowship Program for Foreign Citizens by TUBITAK* Turkey March 2014-March 2015
- Best poster award in 11th International & 23rd National chemistry Conference organized by National Center of Excellence in Physical chemistry, University of Peshawar, Pakistan October 15-17, 2012
- Best debater of the college award in Government College Khanewal during 2003-2006.
- First and 2nd position winner in debate competitions at district level

Administrative Experience

- **Focal Person of Financial Aid Office** University of Education of Education Lahore, Attock Campus from Feb 24, 2020 to July 06, 2021.
- **Incharge Internal Examination** University of Education of Education Lahore, Attock Campus from December 01, 2022 to till.

References

- **Prof. Dr. Muhammad Siddiq**, Department of Chemistry, Quaid-i-Azam University, Islamabad 45320, Pakistan. **Email:** m_sidiq12@yahoo.com **Office:** +92-051 90642147
- **Prof. Dr. Nurretin Sahiner**, Faculty of Science & Arts, Chemistry Department, Canakkale Onsekiz Mart University, Terzioglu Campus, 17100 Canakkale, Turkey. **E-mail:** sahiner@comu.edu.tr **Office:** (286)2180018-2041
- **Prof. Dr. Muhammad Naeem Ashiq**, Institute of Chemical Sciences, Bahauddin Zakariya University, Multan, Pakistan. **Email:** naeembzu@bzu.edu.pk **Mobile No.** 00923009879344

Publications

[52] Farhad Ali, Akbar Hussain, Asadullah Dawood, Muhammad Asim, Muath Suliman, **Muhammad Ajmal**, Muhammad Asad Khan. Synthesis, Characterization, Swelling Studies and Applications of Poly (acrylic acid-co-acrylamide) in Adsorption: Experimental, COMSOL and Hartree-Fock Studies. *Physica B: Condensed Matter*, 717 (2025) 417815.

[51] Zonia Bibi, **Muhammad Ajmal**, Shahaab Jilani, Aqsa Kamran, Fatima Yaseen, Muhammad Abid Zia, Ahmed Lakhani and Muhammad Ali Hashmi. Cu@Phosphorene as a Promising Catalyst for CO₂ to Formic Acid Conversion: A Mechanistic DFT Approach. *Reactions*. 6(3) (2025) 45.

[50] Syeda Huda Mehdi Zaidi, **Muhammad Ajmal**, Muhammad Ali Hashmi, and Ahmed Lakhani. Targeted Drug Delivery of Anticancer Agents Using C₅N₂ Substrate: Insights from Density Functional Theory. *Chemistry* 7(3) (2025) 98.

[49] Irum Fatima, **Muhammad Ajmal**[†], Atif Naseem, Abid Ali, Fatima Javed, Muhammad Ali Hashmi, Khalid Mahmood, Muhammad Ahmad, Faheem Ullah, and Zaheer Ahmad. Fabrication of efficient and easily recyclable silver nanoparticles-anionic polymer hydrogel composite catalyst for rapid degradation of water pollutants. *Journal of Applied Polymer Science*. 142 (19) (2025) e56841.

[48] Irum Fatima, **Muhammad Ajmal**[†], Hina Naeem, Atif Naseem, Abid Ali, Khalid Mahmood, and Zaheer Ahmad. Facile fabrication of poly (Sulfopropyl methacrylate) hydrogel for effective elimination of water-soluble methylene blue. *Journal of Porous Materials*. 32(2025) 605-623.

[47] Maryam Ramzan, Umay Amara, Muhammad Faurooqi, Muhammad Hanif, Shagufta Sirati, Hafiz Asif, Muhammad Rafiq, **Muhammad Ajmal**, Sobia Qadir, Zheng Liu. A Roadmap to Nickel-Based Bimetallic Metal-Organic Frameworks for Supercapacitor Applications. *Coordination Chemistry Reviews*. 532 (2025) 216547

[46] Muhammad Junaid ul Hassan, Abid Ali, Ghulam Mooin Ud Din, Iqra Manzoor, **Muhammad Ajmal**, Mohammed Alsuhybani, Wissem Mnif, Zaina Algarni, Sadaf Ul Hassan, Munawar Iqbal. Bismuth molybdate nanoparticles modified graphene oxide: A novel nanocomposite for photocatalytic removal of organic dyes. *Materials Science and Engineering B* 309 (2024) 117659.

[45] Maria Gul Khatab, **Muhammad Ajmal**[†], Nusrat Jabeen, Hamza Shehzad, Abid Ali, Muhammad Siddiq. Facile preparation of copper nanoparticles decorated reduced graphene oxide for the catalytic reduction of water toxins. *Journal of Materials Science*. 59 (2024) 17860–17876.

[44] Xu Chen Weng, **Muhammad Ajmal**, Hamza Shehzad, Jiaai Chen, Zahoor H. Farooqi, Zhirong Liu, Ahsan Sharif, Ejaz Ahmed, Limin Zhou, Li Xu, Jinbo Ouyang, Ahmad Irfan, Aijaz Rasool Chaudhry, Robina Begum, Saadia Shaukat. Tungsten oxide encapsulated phosphate-rich porous alginate composites for efficient U(VI) capture: Insights into synthesis, adsorption kinetics and thermodynamics. *International Journal of Biological Macromolecules* 261 (2024) 129962.

[43] Aneesa Fatima, Haia Aldosari, M. S. Al-Buraihi, Maryam Al Huwayz, Z. A. Alrowaili, Mohammed S. Alqahtani, **Muhammad Ajmal**, Arif Nazir, Munawar Iqbal, Raqqa Tur Rasool, Sheza Muqaddas, and Abid Ali. Cobalt Ferrite Surface-Modified Carbon Nanotube Fibers as an Efficient and Flexible Electrode for Overall Electrochemical Water Splitting Reactions. *ACS Omega* 8 (2023) 37927–37935.

[42] Kiran Khalid, Anam Zahra, Umay Amara, Muhammad Khalid, Muhammad Hanif, Mubashir Aziz, Khalid Mahmood, **Muhammad Ajmal**, Muhammad Asif, Kinza Saeed, Muhammad Farooq Qayyum, Waseem Abbas. Titanium doped cobalt ferrite fabricated graphene oxide nanocomposite for efficient photocatalytic and antibacterial activities. *Chemosphere* 338 (2023) 139531.

[41] Hina Naeem, Hafiz Muhammad Tofil, Mohamed Soliman, Abdul Hai, Syeda Huma H. Zaidi, Nadeem Kizilbash, Daliyah Alruwaili, **Muhammad Ajmal**[†], Muhammad Siddiq[†]. Reduced graphene oxide-zinc sulfide nanocomposite decorated with silver nanoparticles for wastewater treatment by adsorption, photocatalysis and antimicrobial action. *Molecules* 28 (2023) 926.

[40] Sultana Rahman, **Muhammad Ajmal**[†], Muhammad Siddiq[†]. Micron sized anionic poly (methacrylic acid) microgel particles for the adsorptive elimination of cationic water pollutants. *Zeitschrift für Physikalische Chemie*. 237(1–2) (2023) 121–145.

[39] Muhammad Riaz, **Muhammad Ajmal**[†], Atif Naseem, Nusrat Jabeen, Zahoor H. Farooqi, Khalid Mahmood, Abid Ali, Lubna Rasheed, Ahmad Nauman Shah Saqib. Synthesis of poly(N-isopropyl acrylamide-co-2-acrylamido methylpropane sulfonic acid) hydrogel containing copper and nickel nanoparticles with easy recycling and efficient catalytic potential. *Zeitschrift für Physikalische Chemie*. 236(11-12) (2022) 1441-1460.

[38] Zahoor H. Farooqi, Hamadia Sultana, Robina Begum, Muhammad Usman, **Muhammad Ajmal**, Jan Nisar, Ahmad Irfan, Muhammad Azam “Catalytic degradation of malachite green using a crosslinked colloidal polymeric system loaded with silver nanoparticles” *International Journal of Environmental Analytical Chemistry* 102(16) (2022) 4104-4120.

[37] Sara Zahid, A. Khuzaim Alzahrani, Nadeem Kizilbash, Jaweria Ambreen, **Muhammad Ajmal**[†], Zahoor H. Farooqi, Muhammad Siddiq. Preparation of stimuli responsive microgel fabricated with silver nanoparticles for biosensing and catalytic reduction of water pollutants. *RSC Advances* 12, (2022) 33215 – 33228.

[36] Hamza Shehzad, Zahoor H. Farooqi, Ejaz Ahmed, Ahsan Sharif, **Muhammad Ajmal**, Sana Razzaq, M. Uzair Naseer, M. Ahmad Nazir, Mehwish Batool, Tehreem Akram, Qamar un Nissa, Amarah Fatima, Laiba Akbar. Effective biosorption of Cu(II) using hybrid biocomposite based on N-maleated chitosan/calcium alginate/titania: Equilibrium sorption, kinetic and thermodynamic studies. *International Journal of Biological Macromolecules*. 216 (1) (2022) 676-685.

[35] Khalid Mahmood, Umay Amara, Shahzadi Siddique, Muhammad Usman, Qiaohong Peng, Muhammad Khalid, Ajaz Hussain, **Muhammad Ajmal**, Adeel Ahmad, Sajjad H. Sumrra, Zheng-Ping Liu, Waheed S. Khan, Muhammad Naeem Ashiq. Green synthesis of Ag@CdO nanocomposite and their application towards brilliant green dye degradation from wastewater. *Journal of Nanostructure in Chemistry*. 12 (3) (2022) 329–341.

[34] Syed Rashid Saeed, **Muhammad Ajmal**[†], Iram Bibi, Syed Sakhawat Shah, Muhammad Siddiq. Synthesis and characterization of SiO₂-NiO xerogel nanocomposite prepared by sol–gel method for catalytic reduction of p-nitrophenol. *Journal of Taibah University for Science*. 16(1) (2022) 472–479.

[33] Sultana Rahman, Fatemah. F. Al-Harbi, **Muhammad Ajmal**[†], Atif Naseem, Zahoor H. Farooqi, Muhammad Siddiq. Engineering of micron sized spherical anionic microgel fabricated with silver nanoparticles with antimicrobial and catalytic potential. *Journal of Materials Science*. 57(12) (2022) 6763-6779.

[32] Jaweria Ambreen, Fatemah. F. Al-Harbi, Hina Sakhawat, **Muhammad Ajmal**[†], Hina Naeem, Zahoor H. Farooqi, Nayab Batool, Muhammad Siddiq. Fabrication of poly (N-vinylcaprolactam-co-acrylic acid)-silver nanoparticles composite microgel with substantial potential of hydrogen peroxide sensing and catalyzing the reduction of water pollutants. *Journal of Molecular Liquids*. 355 (2022) 118931.

[31] Aqsa Waqar, Asghari Bano, **Muhammad Ajmal**. Effects of PGPR Bioinoculants, Hydrogel and Biochar on Growth and Physiology of Soybean under Drought Stress. *Communications in Soil Science and Plant Analysis* 53(7) (2022) 826-847.

[30] Hina Naeem, **Muhammad Ajmal**[†], Fatima Khatoon, Muhammad Siddiq, Gul Shahzada Khan. Synthesis of graphene oxide-metal nanoparticle nanocomposites for catalytic reduction of nitrocompounds in aqueous medium. *Journal of Taibah University for Science*. 15(1) (2021) 493-506.

[29] Hina Naeem, **Muhammad Ajmal**, Saba Zamurad Khan, Muhammad Naeem Ashiq & Muhammad Siddiq. Anionic Hydrogel Fabricated with Metal Nanoparticles: Highly Efficient and Easily Recyclable Catalysts. *Soft Materials*. 19(4) (2021) 480-494.

[28] Nusrat Jabeen, Zahoor H. Farooqi, Attaullah Shah, Abid Ali, Muhammad Khurram, Khalid Mahmood, Nurettin Sahiner, **Muhammad Ajmal**[†]. Synthesis and characterization of cobalt nanoparticles containing anionic polymer hydrogel nanocomposite catalysts for fast reduction nitrocompounds in water. *Journal of Porous Materials*. 28(5) (2021) 1563-1576.

[27] **Muhammad Ajmal**, Saad Anwar, Hina Naeem, Muhammad Abid Zia, Muhammad Siddiq. Poly(acrylic acid) hydrogel microparticles fabricated with silver nanoparticles: synthesis, characterization and catalytic applications. *Polymer Engineering and Science* 60 (11) (2020) 2918-2929.

[26] Muhammad Siddiq, Khush Bakhat and **Muhammad Ajmal**[†]. Stimuli responsive microgel containing silver nanoparticles with tunable optical and catalytic properties. *Pure and Applied Chemistry* 92(3) (2020) 445–459.

[25] Khalida Naseem, Zahoor H. Farooqi, Robina Begum, Weitai Wu, Ahmad Irfan, **Muhammad Ajmal**. Systematic study for catalytic degradation of nitrobenzene derivatives using core@shell composite micro particles as catalyst. *Colloids and Surfaces A: Physicochemical and Engineering Aspects* 594 (2020) 124646.

[24] Abdul Haleem, Sidra Bibi Syaal, **Muhammad Ajmal**, Jaweria Ambreen, Sajid Rauf, Nasir Ali, Saz Muhammad, Afzal Shah, Muhammad Abid Zia, Muhammad Siddiq. Silver and palladium nanoparticles embedded poly(n-isopropylacrylamide-*co*-2-acrylamido-2-methylpropane sulfonic acid) hybrid microgel catalyst with pH and temperature dependent catalytic activity, *Korean Journal of Chemical Engineering* 37(4) (2020) 614-622.

[23] Rahmat Ullah, Faiza Jan Iftikhar, **Muhammad Ajmal**, Afzal Shah, Mohammad Salim Akhter, Haseeb Ullah and Amir Waseem. Modified clays as an efficient adsorbent for Brilliant green, Ethyl violet and Allura red dyes: Kinetic and Thermodynamic studies. *Polish Journal of Environmental Studies* 29 (5) (2020) 3831-3839.

[22] T.M. Ansari, **Muhammad Ajmal**[†], S. Saeed, H. Naeem, H.B. Ahmad, K. Mahmood, Z.H. Farooqi, Synthesis and characterization of magnetic poly (acrylic acid) hydrogel fabricated with cobalt nanoparticles for adsorption and catalytic applications, *Journal of the Iranian Chemical Society* 16(12) (2019) 2765-2776.

[21] Z. Shafiq, **M. Ajmal**[†], S. Kiran, S. Zulfiqar, G. Yasmeen, M. Iqbal, Z.H. Farooqi, Z. Ahmad, N. Sahiner, K. Mahmood, Facile synthesis of hydrogel-nickel nanoparticle

composites and their applications in adsorption and catalysis, *Pure and Applied Chemistry* 91(10) (2019) 1567–1582.

[20] S.T. Muntha, **M. Ajmal**, H. Naeem, A. Kausar, M.A. Zia, M. Siddiq, Synthesis, Properties, and Applications of Polysulfone/Polyimide Nanocomposite Membrane Reinforced with Silica Nanoparticles, *Polymer Composites* 40(5) (2019) 1897-1910.

[19] H. Naeem, **M. Ajmal**, R.B. Qureshi, S.T. Muntha, M. Farooq, M. Siddiq, Facile synthesis of graphene oxide–silver nanocomposite for decontamination of water from multiple pollutants by adsorption, catalysis and antibacterial activity, *Journal of environmental management* 230 (2019) 199-211.

[18] **M. Ajmal**, F. Aftab, I. Bibi, M. Iqbal, J. Ambreen, H.B. Ahmad, N. Akhtar, A. Haleem, M. Siddiq, Facile synthesis of porous anionic hydrogel embedded with nickel nanoparticles and evaluation of its catalytic performance for the rapid reduction of 4-nitrophenol, *Journal of Porous Materials* 26(1) (2019) 281-290.

[17] Z.H. Farooqi, R. Khalid, R. Begum, U. Farooq, Q. Wu, W. Wu, **M. Ajmal**, A. Irfan, K. Naseem, Facile synthesis of silver nanoparticles in a crosslinked polymeric system by in situ reduction method for catalytic reduction of 4-nitroaniline, *Environmental technology* 40(15) (2019) 2027-2036.

[16] M. Shahid, Z.H. Farooqi, R. Begum, K. Naseem, **M. Ajmal**, A. Irfan, Designed synthesis of silver nanoparticles in responsive polymeric system for their thermally tailored catalytic activity towards hydrogenation reaction, *Korean Journal of Chemical Engineering* 35(5) (2018) 1099-1107.

[15] M. Waqas, A. Zulfiqar, H.B. Ahmad, N. Akhtar, M. Hussain, Z. Shafiq, Y. Abbas, K. Mehmood, **M. Ajmal**, M. Yang, Fabrication of highly stable silver nanoparticles with shape-dependent electrochemical efficacy, *Electrochimica Acta* 271 (2018) 641-651.

[14] H. Naeem, **M. Ajmal**, S. Muntha, J. Ambreen, M. Siddiq, Synthesis and characterization of graphene oxide sheets integrated with gold nanoparticles and their applications to adsorptive removal and catalytic reduction of water contaminants, *RSC advances* 8(7) (2018) 3599-3610.

[13] F. Bibi, **M. Ajmal**, F. Naseer, Z. Farooqi, M. Siddiq, Preparation of magnetic microgels for catalytic reduction of 4-nitrophenol and removal of methylene blue from aqueous medium, *International journal of environmental science technology* 15(4) (2018) 863-874.

[12] F. Naseer, **M. Ajmal**, F. Bibi, Z.H. Farooqi, M. Siddiq, Copper and cobalt nanoparticles containing poly (acrylic acid-co-acrylamide) hydrogel composites for rapid reduction of 4-nitrophenol and fast removal of malachite green from aqueous medium, *Polymer Composites* 39(9) (2018) 3187-3198.

[11] Z.H. Farooqi, A. Ijaz, R. Begum, K. Naseem, M. Usman, **M. Ajmal**, U. Saeed, Synthesis and characterization of inorganic–organic polymer microgels for catalytic reduction of 4-nitroaniline in aqueous medium, *Polymer Composites* 39(3) (2018) 645-653.

[10] A. Arshad, J. Iqbal, M. Siddiq, Q. Mansoor, M. Ismail, F. Mehmood, **M. Ajmal**, Z. Abid, Graphene nanoplatelets induced tailoring in photocatalytic activity and antibacterial characteristics of MgO/graphene nanoplatelets nanocomposites, *Journal of Applied Physics* 121(2) (2017) 024901.

[9] **M. Ajmal**, S. Demirci, M. Siddiq, N. Aktas, N. Sahiner, Amidoximated poly (acrylonitrile) particles for environmental applications: removal of heavy metal ions, dyes, and herbicides from water with different sources, *Journal of Applied Polymer Science* 133(7) (2016) 43032.

[8] **M. Ajmal**, S. Demirci, Y. Uzun, M. Siddiq, N. Aktas, N. Sahiner, Introduction of double amidoxime group by double post surface modification on poly (vinylbenzyl chloride) beads for higher amounts of organic dyes, As (V) and Cr (VI) removal, *Journal of colloid interface science* 470 (2016) 39-46.

[7] **M. Ajmal**, S. Demirci, M. Siddiq, N. Aktas, N. Sahiner, Simultaneous catalytic degradation/reduction of multiple organic compounds by modifiable p (methacrylic acid-co-acrylonitrile)-M (M: Cu, Co) microgel catalyst composites, *New Journal of Chemistry* 40(2) (2016) 1485-1496.

[6] **M. Ajmal**, S. Demirci, M. Siddiq, N. Aktas, N. Sahiner, Betaine microgel preparation from 2-(methacryloyloxy) ethyl] dimethyl (3-sulfopropyl) ammonium hydroxide and its use as a catalyst system, *Colloids and Surfaces A: Physicochemical Engineering Aspects* 486 (2015) 29-37.

[5] **M. Ajmal**, M. Siddiq, N. Aktas, N. Sahiner, Magnetic Co–Fe bimetallic nanoparticle containing modifiable microgels for the removal of heavy metal ions, organic dyes and herbicides from aqueous media, *RSC advances* 5(54) (2015) 43873-43884.

[4] **M. Ajmal**, M. Siddiq, H. Al-Lohedan, N. Sahiner, Highly versatile p (MAc)-M (M: Cu, Co, Ni) microgel composite catalyst for individual and simultaneous catalytic reduction of nitro compounds and dyes, *RSC Advances* 4(103) (2014) 59562-59570.

[3] Z.H. Farooqi, S.R. Khan, T. Hussain, R. Begum, K. Ejaz, S. Majeed, **M. Ajmal**, F. Kanwal, M. Siddiq, Effect of crosslinker feed content on catalytic activity of silver nanoparticles fabricated in multiresponsive microgels, *Korean Journal of Chemical Engineering* 31(9) (2014) 1674-1680.

[2] **M. Ajmal**, Z.H. Farooqi, M. Siddiq, Silver nanoparticles containing hybrid polymer microgels with tunable surface plasmon resonance and catalytic activity, *Korean Journal of Chemical Engineering* 30(11) (2013) 2030-2036.

[1] S.R. Khan, Z.H. Farooqi, **M. Ajmal**, M. Siddiq, A. Khan, Synthesis, characterization, and silver nanoparticles fabrication in N-isopropylacrylamide-based polymer microgels for rapid degradation of p-nitrophenol, *Journal of Dispersion Science Technology* 34(10) (2013) 1324-1333.

Participation in Chemistry Conferences

1. Invited Speaker at 6th International Conference on “Recent Trends in Chemistry” organized by Department of Chemistry Allama Iqbal Open University (AIOU), Islamabad, Pakistan. February 14-15, 2024.
2. Paper presented in “International Conference on Innovation, Sustainability, and Applied Sciences (ICISAS 2023)” Organized by Curtin University Dubai, UAE. (December 09-10, 2023).
3. Paper presented in “International Conference on Nanotechnology Research and Innovation (ICNTRI-2023)” Organized by University of Aveiro, Aveiro, Portugal. (November 20-24, 2023).
4. Paper presented in 2nd International Conference of Sciences on “Revamped Scientific Outlook of 21st Century, 2023” Organized by Rawalpindi Women University. (15th November 2023).
5. Paper presented in “2nd International Conference on Trends and Research in Chemistry” organized by Department of Chemistry, University of Education, Lahore, Pakistan. May 16-18, 2023.
6. Paper presented in “International Conference on Research advancements in Chemistry” organized by Department of Chemistry, National University of Science and Technology (NUST), Islamabad, Pakistan. March 10-11, 2021.
7. Paper presented in “1st International Conference on Advances in Materials Science” organized by Department of Physics, University of Education, Lahore, Pakistan. July 23-24, 2020.
8. Paper presented in “18th International & 30th National Chemistry Conference on Recent Trends in Chemistry” jointly organized by The Chemical Society of Pakistan & Department of Chemistry University of Management and Technology (UMT), Lahore, Pakistan. November 27-29, 2019.
9. Paper presented in “International Conference on Chemical Sciences” organized by Department of Chemistry Quaid-i-Azam University, Islamabad Pakistan. April 24-26, 2019.
10. Paper accepted for Oral presentation in ACS Spring 2019 National Meeting & Exposition organized by American Chemical Society. March 31 – April 4, 2019
11. Paper accepted for Oral presentation in 23rd Annual Green Chemistry & Engineering Conference/9th International Conference on Green & Sustainable Chemistry (GCE-GSC 2019) organized by American Chemical Society. June 11 - 13, 2019
12. Paper presented in “4th International Chemistry Conference on recent Trends in Chemistry” organized by Department of Chemistry Allama Iqbal Open University (AIOU), Islamabad, Pakistan. November 07-08, 2018.

13. Paper accepted for Oral presentation in 7th EuCheMS Chemistry Congress organized by Royal Society of Chemistry. August 26-30, 2018.
14. Paper accepted for Oral presentation in 15th Eurasia Conference on Chemical Sciences organized by Faculty of Civil and Industrial Engineering of Sapienza University of Rome. September 05-08, 2018.
15. Paper accepted for Oral presentation in 1st Eurasia Environmental Chemistry Congress organized by Turkish Chemists Society. November 01-04, 2018.
16. Poster presented in “A Day long International Conference on Recent Challenges and Chemical Sciences” jointly organized by Institute of Chemical Sciences Bahauddin Zakariya University Multan, Pakistan and Royal Society of Chemistry, Pakistan Local Section. December 22, 2017.
17. Paper presented in “3rd International Chemistry Conference on recent Trends in Chemistry” organized by Department of Chemistry Allama Iqbal Open University (AIOU), Islamabad, Pakistan. November 23-24, 2017.
18. Paper presented in “Fifth International Conference on Multifunctional, Hybrid and Nanomaterials” organized by Elsevier at the Lisbon Congress Center, Praça das Indústrias, 1300-307 Lisboa, Portugal. March 06-10, 2017.
19. Paper presented in “2nd conference on emerging materials and processes” organized by National University of Science and Technology (NUST), Islamabad, Pakistan. December 22-23, 2015.
20. Poster presented in international symposium for advanced materials jointly organized by Kahuta Research Laboratories and National Center for Physics, Islamabad, Pakistan. October 12-16, 2015.
21. Paper presented in 14th International & 26th National chemistry Conference on “Chemistry: Exploring Solutions in the Changing World” jointly organized by The Chemical Society of Pakistan & Department of Chemistry & Department of Biochemistry and Biotechnology of The Islamia University of Bahawalpur, Pakistan. October 05-08, 2015.
22. Poster presented in European Conference on Surface Science 30 (ECOSS 30) organized by Bilkent University, Ankara, Turkey. 31 August - 05 September 2014.
23. Paper presented in 5th Chemistry Conference on “Chemistry in Engineering and Life Sciences” jointly organized by Chemistry Division PINSTECH, DFNFC, NCC and PIEAS, Islamabad, Pakistan. November 04-06 2013.
24. Paper presented in 12th International & 24th National chemistry Conference on “Innovations in Chemistry” jointly organized by The chemical Society of Pakistan & Institute of Chemical Sciences Bahauddin Zakariya University Multan, Pakistan. October 28-30. 2013.

25. Paper accepted for oral presentation in International Conference on Physical and Environmental Chemistry (ICPEC-2013) organized by National Center of Excellence in Physical chemistry, University of Peshawar, Pakistan. September 9 – 11 2013
26. Paper accepted for oral presentation in ICNBS Egypt 2013.
27. Poster presented in 11th International & 23rd National chemistry Conference organized by National Center of Excellence in Physical chemistry, University of Peshawar, Pakistan October 15-17, 2012.
28. Participated in “Symposium on Hydrogen and Fuel Cells” organized by Department of Chemistry Quaid-i-Azam university Islamabad July 9-11, 2012.
29. Participated in 4th International Scientific Spring-2012 (Nano Science) jointly organized by national Centre for Physics (NCP), Islamabad, Pakistan and The Abdus Salam International Centre for Theoretical Physics (ICTP) Trieste, Italy March 05-09, 2012.
30. Participated in 10th International and 22nd National Chemistry Conference organized by Department of Chemistry and Biochemistry, University of Agriculture, Faisalabad, Pakistan November 21-23, 2011.

M.Phil/MS Theses Supervised (37)

Sr. No.	Student	Session	Thesis Title
1	Sonia Zulfiqar	2015-17	Polymer templated metal nanoparticles for environmental applications
2	Aliya Arooj	2015-17	Synthesis of Cobalt oxide/Polyaniline composites for Electrochemical Monitoring of Pesticides in Soft Drinks
3	Sadia Saeed	2015-17	Preparation of poly(acrylic acid) hydrogel fabricated with cobalt nanoparticles for environmental applications
4	Nadeem Abbas	2016-18	Synthesis and characterization of metal nanoparticles containing composite hydrogels for catalytic reduction of nitrocompounds
5	Muhammad Fahad Qureshi	2016-18	Synthesis, characterization and catalytic applications of anionic hydrogels integrated with copper nanoparticles
6	Muhammad Abdullah	2016-18	Synthesis and characterization of responsive hydrogels fabricated with metal nanoparticles for catalytic applications
7	Syed Atif Hussain Shah	2016-18	Preparation of Magnetic hydrogel for the elimination of organic pollutants from water by sorption
8	Muhammad Atif	2016-19	Development of magnetic hydrogel for decontamination of water
9	Zaeema Sajid	2017-19	In situ synthesis of copper nanoparticles in cross-linked polymeric networks for catalytic reduction of organic pollutants
10	Muhammad Riaz	2017-19	Manufacturing of responsive hydrogel fabricated with metal nanoparticles for environmental applications
11	Nusrat Jabeen	2017-19	Synthesis and characterization of responsive hydrogel embedded with cobalt nanoparticles for decontamination of water
12	Gulnaz	2021-23	Synthesis, biological evaluation, and molecular docking studies of nicotinic acid derivatives
13	Munazza Shaheen	2021-23	Development of three-dimensional anionic polymer networks for the decontamination of wastewater
14	Faiza Hayat	2021-23	Synthesis and characterization of hydrogel-metal nanocomposites for detoxification of contaminated water
15	Hafza Rasheed	2021-23	Fabrication of hydrogels integrated with metal nanoparticles for catalytic applications
16	Saima Misbah	2021-23	Development of polymer hydrogels for the adsorptive removal of water pollutants
17	Atif Naseem	2021-23	Synthesis and characterization of functional hydrogels fabricated with metal nanoparticles for the treatment of environmental pollutants
18	Fatima Jillani	2022-24	Synthesis and characterization of poly (acrylamide-co-vinyl sulfonic acid) hydrogel fabricated with copper nanoparticles for the catalytic reduction of 4-nitroaniline
19	Zainab Rasheed	2022-24	Exploring the Synthesis and structural characterization of 3-Trifluoromethyl benzoic Acid Derivatives
20	Rabia Sania	2022-24	Synthesis and Characterization of Nicotinic Acid Derivatives
21	Farhad Ali	2022-24	Adsorptive removal of paraquat from aqueous medium with poly(acrylic acid-co-acrylamide) hydrogel

22	Muhammad Idrees	2022-24	Synthesis and characterization of poly (acrylic acid) hydrogel fabricated with magnetic nanoparticles for the removal of pollutants from water
23	Asma Sohail	2022-24	Designing of sulfonic acid-based hydrogels fabricated with cobalt nanoparticles for the adsorptive removal of crystal violet from water
24	Zoya Zafar	2022-24	Synthesis and characterization of (vinyl sulfonic acid-co-acrylamide) hydrogel for the eradication of water pollutants
25	Naila Iqbal	2023-25	Preparation of copper nanoparticles containing poly (2-acrylamido-2-methylpropane sulfonic acid -co-acrylamide) hydrogel composite catalyst for the fast reduction of 4-nitroaniline
26	Tooba Kainat	2023-25	Synthesis and characterization of anionic hydrogel containing cobalt nanoparticles and its use as catalyst in the reduction of 4-nitroaniline
27	Awais Munir	2023-25	Facile fabrication of poly (2-acrylamido-2-methylpropane sulfonic acid -co-acrylamide) hydrogel containing silver nanoparticles for catalytic applications
28	Zeba Riaz	2023-25	Facile synthesis of poly (2-acrylamido-2-methylpropane sulfonic acid -co-acrylamide) hydrogel embedded with iron nanoparticles for catalytic applications
29	Faria Arshad	2023-25	Adsorptive removal of methylene blue dye from aqueous medium using <i>Pyrus communis</i> biomass
30	Aneela Bibi	2023-25	Adsorptive removal of rhodamine B from aqueous medium using <i>Ficus carica</i> biomass
31	Noreen Asma	2023-25	Degradation of rhodamine B with solution plasma process in aqueous medium
32	Arshia Khan	2023-25	Degradation of eosin Y with solution plasma process in aqueous medium
33	Hamida Rahman	2023-25	Preparation of poly (2-acrylamido-2-methylpropane sulfonic acid -co-acrylamide) hydrogel for the adsorptive removal of janus green B from water
34	Hania Khalid	2023-25	Utilization of <i>Dalbergia sissoo</i> as biosorbent for the removal of congo red from aqueous medium
35	Misbah Ul haq	2023-25	Facile synthesis of poly (gum arabic-co-methacrylic acid) hydrogel for the decontamination of methylene blue dye from aqueous medium
36	Sawera Safdar	2023-25	Adsorptive removal of malachite green from water with anionic hydrogel
37	Rabiya Arshad	2023-25	Synthesis of nickel nanoparticles in three-dimensional anionic polymeric network for catalytic applications

BS Theses Supervised (37)

Sr. No.	Student Name and ID	Session	Thesis Title
1	Andleeb Asif Bsf1700004	2017-21	Facile Synthesis of Polymer Hydrogel for Decontamination of Water
2	Atif Naseem Bsf1700022	2017-21	Synthesis and Characterization of Polymer Hydrogel for Wastewater Treatment
3	Naila Iqbal Bsf1700138	2017-21	Synthesis and Characterization of Anionic Hydrogel for the Removal of Water Pollutants
4	Rimsha Niaz Bsf1700150	2017-21	Development of Three-Dimensional Polymeric Networks for Adsorptive Removal of Dyes from Aqueous Medium
5	Ahsan Nadeem BSF1800715	2018-22	Adsorptive removal of methylene blue from aqueous medium with of poly(acrylic acid-co-Acrylamide) hydrogel: Adsorption Isotherms
6	Ayesha Bibi BSF1800726	2018-22	Adsorptive removal of methylene blue from aqueous medium with of poly(acrylic acid-co-Acrylamide) hydrogel: Adsorption Kinetics
7	Muhammad Hashim Khan BSF1800760	2018-22	Adsorptive removal of methylene blue from aqueous medium with poly(N-isopropylacrylamide-co-2-acryamido-2-methylpropane sulfonic acid) hydrogel: Adsorption Isotherms
8	Huma Malik BSF1800773	2018-22	Adsorptive removal of methylene blue from aqueous medium with of poly(N-isopropylacrylamide-co-2-acryamido-2-methylpropane sulfonic acid) hydrogel: Adsorption Kinetics
9	Maria Ayaz BSF1800789	2018-22	Synthesis and Characterization of poly(acrylic acid-co-Acrylamide) hydrogel
10	Sana Zaheer BSF1800792	2018-22	Synthesis and Characterization of poly(N-isopropylacrylamide-co-2-acryamido-2-methylpropane sulfonic acid) hydrogel
11	Aasia Ayaz BSF1800859	2018-22	Adsorptive removal of malachite green from aqueous medium with of poly(acrylic acid-co-Acrylamide) hydrogel: Adsorption Kinetics
12	Manahil Rauf BSF1800863	2018-22	Adsorptive removal of malachite green from aqueous medium with of poly(acrylic acid-co-Acrylamide) hydrogel: Adsorption Isotherms
13	Farzana BSF1900576	2019-23	Adsorptive removal of methylene blue from aqueous medium with of poly(acrylic acid) hydrogel: Adsorption Isotherms
14	Awais Munir BSF1900633	2019-23	Adsorption of methylene blue from water on poly(methacrylic acid) hydrogel: Adsorption Isotherms
15	Waseem Khan BSF1900677	2019-23	Adsorptive removal of crystal violet from aqueous medium with poly(acrylic acid) hydrogel: Adsorption Isotherms
16	Zeba Riaz	2019-23	Adsorptive removal of crystal violet from aqueous

	BSF1900682		medium with poly(acrylic acid) hydrogel: Adsorption Kinetics
17	Safiullah BSF1900739	2019-23	Adsorption of methylene blue from water on poly(methacrylic acid) hydrogel: Adsorption kinetics
18	Mehmood Ahmed Khan BSF1900743	2019-23	Synthesis and characterization of poly(methacrylic acid) hydrogel for the adsorptive elimination of crystal violet from water
19	Samra Zeb BSF1900804	2019-23	Adsorptive removal of methylene blue from aqueous medium with of poly(acrylic acid) hydrogel: Adsorption Kinetics
20	Saba Arif Khan BSF2001345	2020-24	Synthesis of poly(acrylic acid) for the adsorptive decontamination of water
21	Laraib BSF2001380	2020-24	Synthesis and Characterization of poly (acrylic acid-co-acrylamide) hydrogel for the uptake of methylene blue from aqueous medium: adsorption isotherms
22	Mehwish Bibi BSF2001261	2020-24	Synthesis of poly (Acrylic acid-co-Acrylamide) hydrogel for the removal of methylene blue from the water; swelling study & adsorption kinetics
23	Afeera Adeel BSF2001059	2020-24	Synthesis and analysis of anionic hydrogel for the removal of water pollutants
24	Ayesha Saeed BSF2001260	2020-24	Fabrication of poly (acrylic acid) hydrogel and its utilization as an adsorbent for the elimination of cationic pollutants from water
25	Laraib Afzal BSF2001271	2020-24	Adsorptive removal of crystal violet from aqueous medium with Dalbergia sissoo sawdust
26	Mariya Noor BSF2001033	2020-24	Synthesis and characterization of poly (acrylic acid-co-acrylamide) hydrogel for adsorption study of crystal violet
27	Noor ul Huda BSF2001194	2020-24	Preparation, characterization and adsorption applications of poly (acrylic acid) hydrogel for the removal of crystal violet from water
28	Saima Hafeez BSF2001052	2020-24	Adsorptive removal of crystal violet from aqueous medium with poly (acrylic acid-co-acrylamide) hydrogel
29	Muhammad Abdullah Khan BSF2001126	2020-24	Synthesis and characterization of poly(acrylamide) hydrogel for the removal of methylene blue from water
30	Muhammad Waleed BSF2001038	2020-24	Preparation of poly(acrylamide) hydrogel for the uptake of methylene blue from water: adsorption kinetics
31	Alisha Akhtar bsf2101438	2021-25	Adsorptive removal of crystal violet from water using poly(acrylic acid-co-acrylamide) hydrogel: adsorption isotherms
32	Aqsa Sabir bsf2001334	2021-25	Synthesis of poly (acrylic acid-co-acrylamide) hydrogel for the removal of crystal violet from water: insights into swelling study and adsorption kinetics
33	Jawad Ahmad bsf2101682	2021-25	Utilization of poly(acrylic acid-co-acrylamide) hydrogel for the adsorption of methylene blue: adsorption kinetics
34	Mashal Ain bsf2101632	2021-25	Synthesis of poly (acrylic acid) hydrogel and its utilization in the adsorptive removal of methylene blue from water: adsorption kinetics
35	Aqsa Arif Khan	2021-25	Synthesis and characterization of poly (acrylic acid) hydrogel

	bsf2101428		for adsorption study of crystal violet: adsorption isotherms
36	Muhammad Tayyab bsf2101625	2021-25	Synthesis and characterization of poly (acrylic acid) hydrogel for adsorption study of crystal violet: adsorption kinetics
37	Ayesha Khan bsf2101528	2021-25	Adsorptive removal of arsenic from aqueous medium by poly (2-acrylamido-2-methylpropanesulfonic acid-co-acrylamide) hydrogel

Reviewer of International Journals

1. Journal of Materials Science
2. Applied Surface Science
3. Korean Journal of Chemical Engineering
4. Polymer Composites
5. Polymer Engineering & Science
6. Applied Organometallic Chemistry
7. Journal of Porous Materials
8. Desalination and Water Treatment
9. Polymers for Advanced Technologies
10. Journal of Taibah University for Science
11. Materials Science and Technology
12. International Journal of Environmental Analytical Chemistry
13. Zeitschrift für Physikalische Chemie
14. Materials
15. Nanomaterials
16. Scientia Pharmaceutica
17. International Journal of Molecular Sciences
18. Gels
19. Polymers
20. Sustainability
21. Pharmaceutics
22. RSC Advances
23. Materials letters
24. Water
25. Biomass Conversion and Biorefinery
26. Polymer